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Prospect Park.

PROSPECT PARK, in the City of Brooklyn, is one of the great artistic creations of modern times. It is the best expression of the creative powers of masters in the art of landscape-making, who, more fortunate here than elsewhere in features of natural beauty, and especially in a native growth of majestic trees, were able to produce an urban park unsurpassed in any part of the world in the breadth and repose of its rural beauty.

The condition of this great work of art, which, under the most favorable circumstances, could not attain its full beauty and usefulness for another century at least, is, in some respects, deplorable; and if we can judge by the contents of the twenty-seventh report of the Brooklyn Park Department, the ideas held by the Board of Park Commissioners with regard to the responsibilities of their office, are not calculated to inspire confidence in its future.

The plantations in many parts of the park, were made with a view to results that could only be obtained by a gradual and discriminating thinning-out of many trees and shrubs originally planted thickly. This has for years been shamefully neglected. The Commissioners have at last been impressed, however, by the immediate results of this neglect, and have determined to make up for the neglect of their predecessors. Their report gives no sign, however, that they have proceeded with any understanding of the original motives of the plantations, that they have desired to understand them, or have given them any consideration. All they say of their doings, at least, indicates the contrary.

Let us consider what they are likely to accomplish. An urban park is useful in proportion as it is rural. The real, the only reason why a great park should be made, is to bring the country into the town, and make it possible for the inhabitants of crowded cities to enjoy the calm and restfulness which only a rural landscape and rural surroundings can give. This is why a large park is better than many smaller ones, and why all other objects must, in a great park, be subordinated to the one central, controlling idea of rural repose, which space alone can give. A park is useful as a playground, or as a breathing space in a city, or as a picnic ground; it may be made interesting by the plants which it contains, or by the equipages which throng its drives; but its real object, its highest claim, to take rank among the best productions of modern civilization, is found in the rest of spirit it can bring to the souls of the weary dwellers in cities. It was with this feeling and with this understanding of what a park should be, that Prospect Park was designed and executed, and anything which is done to lessen its usefulness in this direction is a calamity which persons who only look upon a park as a good place in which to play ball, or drive a fast horse, do not readily appreciate.

To the expression of rural repose in a park, three things are supremely necessary; first, a considerable extent of actual space of natural landscape; second, indefiniteness or mystery of the outlines of the actual landscape space, obtained by curtaining off with natural bodies of foliage such outside objects as the eye would otherwise rest upon; third, by subordinating necessary artificial objects within the park so far as practicable to its natural elements.

The easiest way to destroy the rural character of a park and limit its apparent extent is to open its borders so that outside objects can be seen from within. There is danger that the Prospect Park Commissioners, in their unadvised cutting, will do this. The thinning-out of plantations like those in Prospect Park, where so much depends upon unity of expression and harmony in composition, is a matter of such delicacy that it cannot safely be entrusted to any one but an expert trained in the consideration of the necessities of similar cases. If the Commissioners appreciate the responsibilities which they have assumed in taking charge of such a creation as this park, they will inaugurate a systematic thinning of the plantations under some competent authority, and not trust their own inspirations.

Particular attention was given in the design for Prospect Park, to providing proper accommodation for the enjoyment of out-door concerts. The principal artificial feature of the Park, is the noble lake; in this lake and close to the most picturesque part of the shore a little island was made to serve as a music-stand, while on the adjacent shore a wide and beautifully planted promenade, unsurpassed in extent and completeness of arrangement, was to offer to pedestrians every opportunity to listen to the music, which the occupants of carriages might hear equally well from two large gravel concourses, specially designed for this purpose. The most costly work upon the park was used in the decoration of these arrangements. Extensive refreshment-houses, fountains, seats, broad flights of stairs, superb terrace-walls of sculptured stone with bronze ornaments—all were designed as parts of one scheme embodying the purpose of assembling great bodies of people, within hearing distance of a central point. The outlines of the lake for a long distance were determined with reference to this purpose, bridges were planned, and boat-landings and approaches from all directions laid out with reference to it. The expenditure for the purpose must have amounted to several hundred thousand dollars. The designed use of the arrangement was delayed until the trees planted for shade should have grown to serve their purpose. Now that they have done so, the Commissioners state that they have satisfied themselves, by an experiment, that the acoustic effect of the music from the point intended would be a failure. There are few questions more difficult and with regard to which ordinary architects and ordinary musicians are more in doubt, than that of the minor conditions by which the effect of music is heightened or marred. What recognized master in the science of acoustics the Commissioners employed, what variety of experiments were made, to what extent they were carried, and upon the verdict of what jury of experts their decision was reached, is not to be learned from their report. The

conclusion announced is simply that the scheme, the required outlay for which had been almost entirely made before that time, has been abandoned; and that the Commissioners have built a permanent music-stand under the shadow of a trimmed-up old natural wood, in a part of the park to which the original design provided no suitable approaches, having in view the maintenance of the secluded sylvan character which it originally possessed. The construction which the .Commissioners have here erected combines, they state, the purpose of a storage house, of a music-stand, and of a battle-monument, the latter being realized by giving its basement the semblance of a fortification.

The noble plaza outside the principal entrance of the park is described by the Commissioners in their report as a "great failure, suggestive of Siberia in winter and Sahara in summer," and it is suggested to convert it into a garden after the fashion of the Public Garden in Boston. It is evident that the Commissioners do not understand the motives which led to the creation of the plaza, which is really one of the great features of the park, and which provides, among other things, a proper place in which great public meetings can be held outside the park itself. To those who have seen the effects of public meetings upon the London parks, the establishment of this broad paved plaza will seem a wise provision indeed. It greatly facilitates, too, the entrance of carriages into the park as the currents of street traffic approach here upon lines coming from six different directions, which without the plaza would create hopeless confusion.

But it is not necessary to cite other examples of the mental condition of these Park Commissioners as displayed in this remarkable report.

Enough has already been said to show how great the danger is which constantly threatens not only Prospect Park, but all our public parks, and how great is the necessity that the people who inhabit our cities should fully appreciate and understand the real objects for which parks are created. Until the public is educated in all that relates to parks, and until its interest in them can be stimulated and maintained, it seems impossible for an artist to make a design for a public ground, with any hope that his plan will be realized. Let the motives of such a design be studied and adapted with the greatest care; let them be elaborately discussed and illustrated and explained; even if the public approves and endorses them for years and millions are expended in putting them into execution, the time will come, as it has now come in Brooklyn, when a body of men, with no higher claims upon the confidence of the public than their predecessors, will enter upon their duties, either in utter ignorance of what those duties really mean, or with the purpose of ignoring the original motives which governed the construction of their trust, and of seeking for excuses to build a new park upon its ruins. This is a matter of more than local significance and importance. Every park in this country, great and small, has suffered from the causes which are now threatening Prospect Park, and every park must inevitably suffer from the same causes, until public interest and public intelligence is so educated in these matters that the prevalent conception of the responsibilities of Park Commissioners shall be much more serious and enlightened than it is at the present time.

The Artistic Aspect of Trees. I.—Form.

MANY persons profess themselves lovers of trees and find much real delight in shadowy forests, varied plantations, and well-developed isolated specimens. Yet most of them would be surprised if they were asked whether they had ever studied the aspect of trees from the artistic standpoint, and very few give proof that they have held this standpoint even unconsciously to themselves. Nevertheless it is only by studying trees, whether consciously or unconsciously, from the artistic point of view, that we can arrive at a realization of the peculiar character and beauty of one species as contrasted with others, or of the individuals of a single species when seen under different conditions. Only thus can we learn really to appreciate trees, though science may teach us how to understand them; and only when we really appreciate them can we thoroughly enjoy them or use them to the best advantage.

From the artistic point of view trees have three characteristics which may be separately considered—form, texture and color. It is of form only that we shall speak just now.

The first element in the form of a tree is its general outline, its contour, the silhouette it makes when relieved against the sky or against masses of trees of other kinds. The outline peculiar to a given species may vary a good deal, of course, in different individuals; but in all full-grown and well-grown individuals it will be so nearly the same that the typical shape of the species may often be expressed in a very simple diagram on paper. An isosceles triangle with a broad base, for instance, gives the typical outline of the Spruce; a similar figure, but with swelling sides, gives that of a freely developed Hemlock; the White Elm would fill a vase-like figure supported by a straight line for the stem, the Hickory an elongated oval, the Sugar Maple a much fuller oval, the White Birch a very long and slender oval, and the Oak a figure approaching more nearly to a circle. In other cases the form of the head is more irregular, as with the Silver Maple, for instance, the typical shape of which would require to be expressed in a diagram of broken outline. But even in such cases this shape may be easily imprinted upon the memory, and, once imprinted, the pleasure of looking upon a new specimen of the tree is greatly increased by one's knowledge of how nearly it coincides with, or how far it departs from, the typical form of the species to which it belongs.

But a tree's general outline is by no means the only thing which determines what an artist would call its form. Its structure is almost of more importance than its outline in determining this, as within comparatively narrow limits its structure does not vary, while its outline may be greatly affected by a hundred accidents of position and experience. The branches of a tree may droop as in the Spruce, or spread at right angles as in the Cedar of Lebanon, or sharply ascend as in the Lombardy Poplar, or weep as in the White Elm; and between these extremes almost as many variations in branch-direction will be found as there are kinds of trees to examine. Each variation gives a tree a different form, the peculiarities of which are increased, of course, by such other facts of structure as the greater or less number of branches giving greater or less density and uniformity of surface to the head. And each of these differences of form means a difference in the expression of a tree—a difference in the character of its beauty, and, therefore, of its appropriateness to a given situation. A tree of regular, formal outline has beauty of a sort wholly unlike that of a tree with an irregular, broken outline; and the same is true when we contrast one that has many main branches dividing again into many minor ones, and, therefore, a dense, compact head, with one that has fewer branches and a more open and broken surface.

The average size to which the trees of a given species are apt to grow is, of course, another element to be considered in studying tree-forms. This is so obvious a characteristic than even the least artistic eye will note it, the most thoughtless planter will take it somewhat into account. But if we may judge by the results we see all around us in places where an intelligent landscape gardener has not been employed, few persons pay any attention to other characteristics of form. As an English writer said not long ago, it is lamentable to see how even the most enthusiastic amateur lovers of trees ignore those considerations which are "the commonplaces of the landscape gardener." Mere chance or at most a thoughtless,

abstract preference for some kind of tree seems much more often to have determined planting than a clear realization of intrinsic characters accompanied by reflection with regard to the appropriateness of one character or another to a special spot. We have known a would-be planter to ask for Elms, and yet not know whether he wanted American White Elms, which would grow up into vase-like, drooping forms, or English Elms, which would assume shapes almost identical with the shapes of Oaks. If a single tree is wanted in a conspicuous position a Sugar Maple is chosen, perhaps, because Sugar Maples are known to be "good trees," although it would be less well in place with its roundish head than a Hickory with its taller, narrower shape, or a Hemlock, sweeping the grass with its branches. It is the same when trees are set in masses—little thought is given to the way in which their forms will contrast one with the other, and a distressing confusion results where pendulous Birches, spiry-topped Spruces, round and solid Horse-Chestnuts and straggling Silver Maples work in concord only in a single way—each to prevent the others from appearing well and to deprive the plantation as a whole of unity, grace and effective expression.

But even when facts of outline are borne in mind, facts of structure are constantly forgotten. Yet these are of particular importance when a tree is placed in isolation. Almost any kind of contour is agreeable in an isolated tree, but in certain situations it makes a vast difference whether the eye rests upon an almost unbroken surface, like that presented by the Horse-Chestnut until it has reached a great age, or upon a surface which an artist would call boldly and effectively "modeled"—a surface diversified by those alternations of light and shadow which give variety of form within the limits of the general contour.

Of course no rules can be laid down in writing with regard to the employment of trees of various forms. The only way to use them well is to know them well; and the only way to know them well is to study them long and carefully. With scarcely a possible exception to be found, nature plants her trees with an artistic eye; and by studying her methods we may learn how to form our own. From the methods of intelligent men we may also, of course, often learn the same lesson, while from those of the less intelligent, we may gain, if we examine them in the right way, at least the knowledge what not to do. Taste is the guide we need to help us, and taste means the cultivation of our own perceptive powers, not the learning of cut-and-dried æsthetic formulas.

A movement has been started to induce the Canadian Government to establish a forest-preserve about the headwaters of the Muskoka River, which flows into Lake Huron, and of several of the important streams which feed the Ottawa, and which rise in the same region, Island Lake, the head of the Muskoka, being not more than half a mile distant from Otter Slide Lake, from which springs the Petewawa, a feeder of the Ottawa. This is a picturesque and well-wooded country, abounding in lakes and streams and swamps, and still frequented by game and game-fish; it is, moreover, one of the most important in Ontario as a natural reservoir. The proposed reservation embraces a territory of 330,000 acres, exclusive of an area of about 60,000 acres more of water. What the promoters of this scheme desire is that the government should create a public forest and define its boundaries; and appoint a forester and assistants to take charge of it; and cut the timber as soon as ripe under proper rules and regulations. There can be no doubt that the preservation of a great forest area at the headwaters of such important streams would be an immensely advantageous and profitable investment for the Canadian Government, not only in the influence it would exert upon the water supply, but in increased and permanent lumber crops, which good management would insure. This is a matter which should appeal to all Canadians interested in the development of their country, and one which the people of the United States will watch with interest, as an example of what must be attempted in this country if our forests and streams are to escape the extermination which now threatens them on every side. It is proposed that the Ontario Reserve shall be known as the Algonkin Forest.

Foreign Correspondence.

London Letter.

The wealth of hardy tree and shrub bloom this season is marvelous, and as we are always seeking for causes in gardening we are inclined to attribute the profuse flower crop to the long period of hot and dry weather last summer, which naturally tended to ripen thoroughly the growth of open air vegetation. The charm of beauty of a richly planted English garden at this time of the year could not probably be rivaled in any other country, our moist climate being so exactly suited to the majority of trees and shrubs from temperate climes. A walk through the gardens at Kew just now, which contain representatives of nearly every known hardy tree and shrub, is a great pleasure. There you see more clearly now than at any other season the wealth of exotic growth from every temperate country. You see how largely we are indebted to the floras of China and Japan, of Chili and of other regions of South America, of Central Asia, and of southern and central Europe. But from no country have our gardens derived so much of their open air beauty as from the vast North American continent, which we might say has supplied us with fully two-thirds of our ornamental trees and shrubs. The list I jotted down at Kew a day or two ago of showy flowering trees and shrubs from North America would alone make beautiful a large garden. Its range of color, of size and habit of growth is so wide that one might plant an exclusively American garden in a most artistic way. The term American garden in England has long been a misnomer. It is commonly supposed that the comparatively few members of the Heath family, the genera Azalea, Rhododendron, Kalmia, Ledum, Andromeda and the rest of peat-loving plants, comprised all that is worth planting of American shrubs. Happily, however, Kew is showing the public by good culture many others that deserve higher popularity, and our nurserymen are growing wise and propagate the best things largely so as to render them easily obtainable. I note a few of the North American shrubs now in bloom, which are undeservedly neglected by landscape gardeners and other planters in England.

There is not a lovelier shrub than the Rocky Mountain Bramble (*Robus deliciosus*), and of late years it has proved itself perfectly hardy, though for a long time only grown against walls. It makes wide spreading bushes which now are lit up by a profusion of great saucer-shaped flowers of snowy whiteness like single Roses. The large nurseries are now getting good stocks of it. *Pyrus coronaria*, though such an old introduction, is rarely seen, though for the beauty of its flowers it has few rivals among ornamental Pears and Apples. Its profuse crop of large rose-colored, semi-double blossoms, deliciously fragrant, render it in bloom one of the finest of lawn trees. The new *Neviusia Alabamensis* is flowering abundantly against a warm wall at Kew. Though not a particularly showy shrub, it is elegant in bloom, the flowers being in tufted feathery clusters of a pale yellowish green. The Californian *Ribes speciosum*, called here the Fuchsia-flowered Currant, is a very beautiful shrub, particularly as a wall covering, though quite hardy enough as an open air bush. There is no Ribes like it that I know and the blossoms look uncommonly like those of some of the old Fuchsias. Very charming in many an English garden now is *Choisya ternata*, called the Mexican Orange Flower, the

blossom being so much like that of the Orange, though it lacks the perfume. It is not thoroughly hardy, but as a wall shrub is excellent, the more so because evergreen.

The Snowdrop tree (*Halesia tetraptera*) flowers timidly at Kew, but this is, I think, because the dry, sandy soil does not suit it. I imagine it would do better planted near the edge of a lake or stream in the same position as one would plant a Catalpa or Deciduous Cypress. It is extremely pretty in bloom, the name Snowdrop tree being most appropriate. One of the Viburnums (*V. prunifolium*), called, I think, Black Haw by Gray, is a showy shrub at Kew, the large, white flower-clusters being like that of Laurestinus. I consider it a good ornamental shrub. The American Judas tree (*Cercis Canadensis*) is poor compared with the European Judas tree (*C. Siliquastrum*), so that I will not attempt to extol its merits. *C. Chinensis* is also flowering side by side with the other two, but it is likewise inferior. The common Judas tree is one of the prettiest spring flowering trees we have, being now literally smothered with brisk bloom. Other American trees that help to make our lawns and shrubberies beautiful now are the Red Buckeye (*Æsculus rubicunda*), the Amelanchier, some of the Thorns (*Cratægus*), *Magnolia acuminata* and *M. Fraseri*, the latter being scarcely inferior to the noble *M. grandiflora* of the southern States. The glorious race of Hybrid Azaleas and Rhododendrons are scarcely at their best, being fully three weeks behind their usual date of flowering this year. *W. Goldring.*

London, June 1st.

The New York Flower Mission.

THE eighteen years' work of the Flower Mission has demonstrated to those interested the usefulness of flowers among the sick, poor and degraded.

The New York Flower Mission was established three months after the one in Boston, which was founded by members of the congregation of Rev. Mr. Hays, in 1870. A Flower Mission in San Francisco, California, has been in operation several years, organized on plans sent from the New York Mission. Americans living in Japan, who were interested in the work here, have one in successful operation there. And now children of the Tokio Flower Mission, the children of high-class Japanese officials, in company with their little American and European cousins, go out to distribute among hospital patients the flowers that have a healing influence.

The mission was originally established to distribute flowers among the hospitals, but soon there were requests for nosegays from the Homes for the Aged, the Insane Asylums and from the sick and poor in tenements. And now nurses, bible-readers and all sorts of missionaries call at the Mission rooms for a basket of bouquets to give out at the dispensaries, or to carry to those in distress.

Flowers come in from all directions within a radius of a hundred miles of the city. They come from private gardens, from Sabbath-school societies, from guilds, and King's Daughters. They are carefully assorted and packed, and are brought free of cost by express companies. The room of the Mission is furnished by All Souls' Church, and the total expenses last season of the New York flower mission from May until November was but $30.

The distribution of flowers takes place on Mondays and Thursdays, when the flower girls are anxiously awaited at the institutions and places where they are expected. There is an endeavor made to please the fancies of those in confinement by selecting for them flowers for which they have a preference. The blind choose the blossoms that are strongly perfumed, such as Lilacs, Tuberoses and Honeysuckles. Colored people prefer the gaudiest flowers, while children beg for wild flowers, fruit blossoms, Field Daisies and Sweet Clover.

Germans make requests for Geraniums, which they propagate; Peonies, Tradescantias and Ivy; strawberry boxes filled with growing Ferns give great delight to persons of this nationality, as do Pfingster blossoms. The French ask for Violets, Pansies and Mignonette.

Men have their share of the flowers taken to hospital patients. They are received by them with the same eagerness shown by women. Flowers are particularly requested when important operations are to take place, as they are known to give fortitude and hope. Their influence upon the insane has been so soothing, that the keepers of the mad-house on Blackwell's Island made especial request last season that their annex for the raving patients should receive flowers as often as possible. Insane men were formerly neglected, but this year a particular request has been made that flowers be sent to them as well as to the women.

It has in many instances been shown, when slips and plants have been given to the poor in tenements, that they have awakened an interest and given healthful occupation to some intemperate member of the family, who has in this way been diverted from drink, and it appears that the love for flowers is a strong remedial force when mind or body is weakened or diseased.

The officers of the mission propose to extend their work through the winter season if they can enlist the aid of florists, to supply them with growing plants during the time when the cut flower distribution would be impracticable. They would give out cuttings and small plants from depots established in localities where the poorest people live. They would give printed instructions how to treat the plants and offer a prize for the best results with these plants in the spring. The wholesome effect of plant-culture, it is hoped, might work a beneficent influence in the homes of the vicious. It is proposed to give an exhibition for the benefit of the mission of the plants presented by it and grown in humble homes. In time this project will undoubtedly be carried out.

It has been observed that the poor Germans who beg for the "Flowers of the Fatherland," to grow in their windows, as reminders of home, show the most interest in their cultivation, and are the most successful growers. In the German hospital, the sick have dried their flower bunches and made paper bags to preserve them in. Those who are hopelessly ill have asked that their flowers be buried with them. In the day nurseries, the little toddlers forsake their toys for a flower, and betray extreme delight when one is given to them. It is said that flowers are better than monitors to keep the children in good order. *F. A. Benson.*

Plant Notes.

Notes Upon Lilacs.

LILACS, especially many of the garden varieties of *Syringa vulgaris*, are met with wherever hardy shrubs are cultivated; but there are several species of the genus, which, although possessing ornamental qualities of the highest order, are rarely seen in gardens. It is proposed to figure from time to time a number of these in these columns when proper material can be obtained for the purpose, in order that they may become better known and their beauty appreciated.

The genus *Syringa* is composed of about a dozen species of shrubs or shrub-like trees distributed from south-western Europe through central Asia and the Himalayas to Mongolia, northern China and Japan. They have opposite entire or rarely pinnately-divided, smooth or slightly pubescent, deciduous, or in one species persistent leaves, a terminal thyrsus of small, generally fragrant, lilac or white, regular, monopetalous flowers, with a campanulate, irregularly dentate calyx; a corolla, with a long or short cylindrical tube and a four-lobed limb, revolute in the bud; two stamens inserted below the mouth of the tube, with short included, or subulate exserted, nearly extrorse anthers; an included style, with a slightly or deeply cleft stigma; a two-celled ovary, with two minute suspended ovules in each cell, a subterete oblong capsule flattened contrary to the narrow partition, two-valved, the valves almost conduplicate; and pendulous compressed seeds, with slightly winged margins, a thick membranaceous coat, fleshy albumen and flat cotyledons.

The species may be grouped as follows:

§ EUSYRINGA.

Tube of the corolla long; flowers purple.

* *Leaves green on both sides.*

1. *S. vulgaris*, L. Leaves smooth, long-petioled, cordate or ovate-cordate, contracted into a slender point; inflorescence often in pairs from the ends of the branches; calyx irregularly four-tubed, glandular puberulous; limb of the corolla concave, the lobes cymbiform; anthers included; fruit smooth, ovate.

Syringa vulgaris is a native of the mountainous region of central Europe from Piedmont to Hungary. It has been a favorite garden plant for three centuries, and has produced in cultivation a great number of varieties with more or less dense inflorescence, and with flowers varying from purplish red to pure white. Double-flowered and blotched-leaved varieties are cultivated. The leaves of this species and of all the varieties are often greatly disfigured in the United States during the summer and autumn months by the attack of a white mildew.

Syringa oblata (see illustration on this page) is not known in a wild state; it was first discovered by Fortune in a garden at Shanghai, and later by the Abbé David in gardens near Pekin. Its perfect hardiness in this climate indicates its northern origin. *S. oblata* differs but slightly in botanical characters from some forms of *S. vulgaris*, a geographical variety of which, it should, perhaps, be considered, although, from a garden point of view, quite distinct. Here it flowers ten or twelve days earlier than the earliest varieties of *S. vulgaris*, and its thick leathery leaves, which are never attacked by mildew, turn in the autumn to a rich dark russet-red color, a character which should be taken advantage of by hybridizers to secure a new race of Lilacs with the large inflorescence of *S. vulgaris* and the foliage of this Chinese plant. *S. oblata* is a stout spreading shrub here, now eight or ten feet high, flowering profusely every year. There is a white-flowered variety, which has not flowered here.

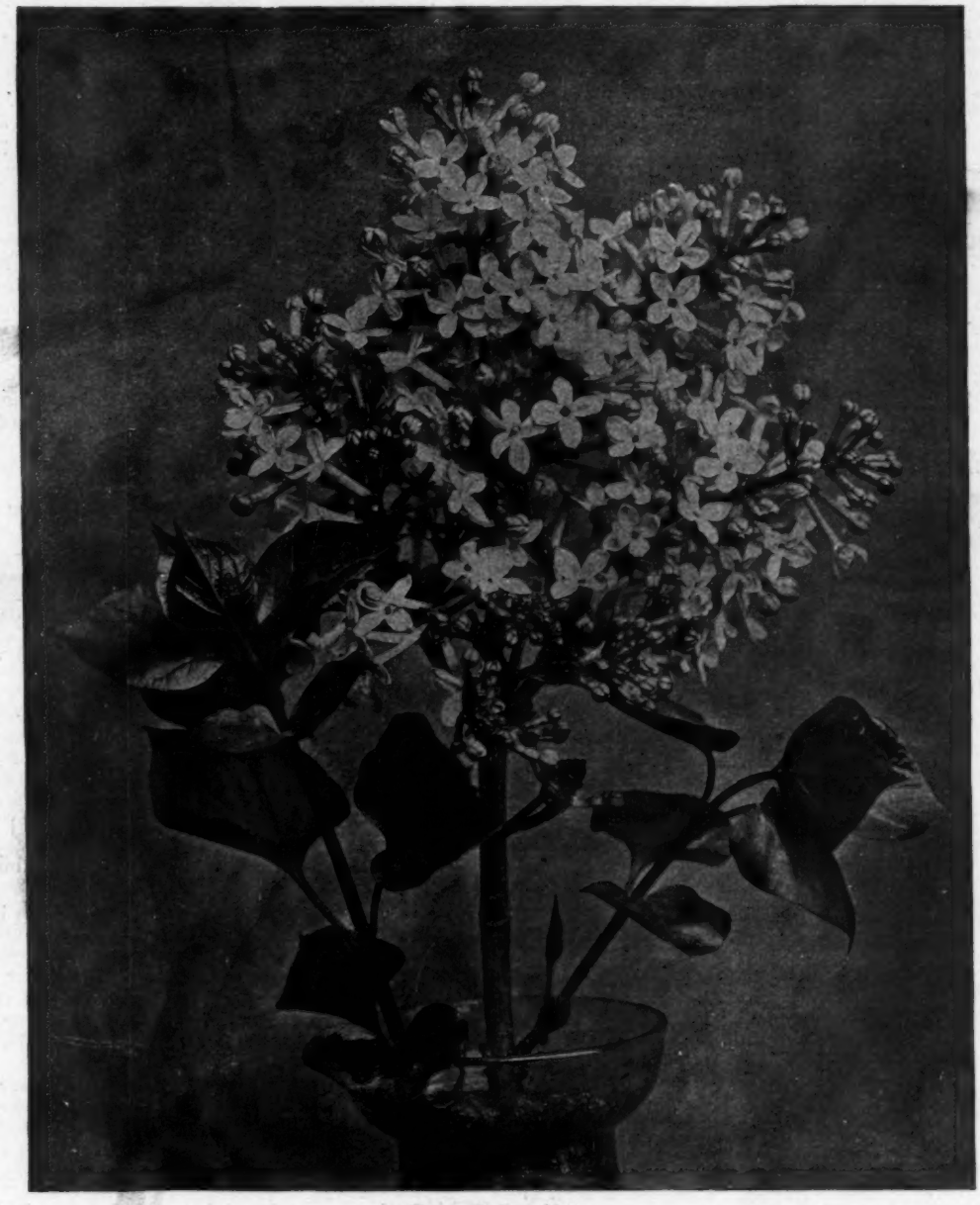

Fig. 39.—Syringa oblata.

2. *S. oblata*, Lindl. Leaves broadly cordate or deltoid, sharply acuminate; thyrsus short and broad, often in pairs from the ends of the smooth or slightly puberulent branches; flowers large, appearing just before or with the unfolding of the leaves; calyx irregularly dentate, the teeth obtuse or sublanceolate, the tube slightly glandular; lobes of the corolla round and flat; anthers included; fruit smooth-ovate, acute.

3. *S. Chinensis*, Willd. Leaves ovate, acuminate, obtuse or rounded at the base or often contracted into the long,

slender petiole; calyx campanulate, irregularly four-toothed; tube of the corolla long and slender, the obtuse lobes of the limb spreading with inflexed margins, sometimes mucronate; anthers included; stigma two-lobed; fruit oblong, acuminate, smooth.

Syringa Chinensis, Willd. Berl. Baum., i. 48.
Lilac Varina, Dum. Cours. Bot. Cult., ii. 547.
S. Rothomagensis, Nouv. Duham., *t.* lviii.
S. dubia, Pers. Enchyr., i. 9.
S. correlata, A. Br. Sitz. Gesell. Nat. Berlin, 1873, 69.

This plant, although long cultivated, is not known in a wild state. It is believed to be of Chinese origin, and it is not uncommon in the gardens of Pekin. In general appearance, in the shape of the leaves, the size of the flowers and in the period of blooming, it is intermediate between *S vulgaris* and *S. Persica*. This is one of the hardiest and handsomest shrubs in cultivation, producing its enormous rather lax clusters of flowers in the greatest profusion. There are varieties with rosy purple and with white flowers.

4. *S. Persica*, L. Leaves ovate, lanceolate, narrowed into an acute, sometimes mucronate point, entire or rarely pinnatifid, the base contracted into a slender petiole; thyrsus loose, the flowers spreading; calyx with four obtuse lobes; tube of the corolla long and slender, the ovate lobes with inflexed margins slightly spreading; anthers included; fruit linear, obtuse or apiculate, smooth.

Syringa Persica has long been an inhabitant of the gardens of Persia and India, whence it was introduced into Europe and America. Its native country, however, was long unknown until it was met with by Dr. Aitcheson, of the Afghan Boundary Survey, who found it "a very common shrub on the low and outer hills near Shalizan up to nearly 7,500 feet."* Varieties with lilac and with white flowers are common. *S. pteridifolia* is a variety in which the leaves are deeply laceniate.

** *Leaves pale on the under side.*

5. *S. villosa*, Vahl. Young shoots smooth, slightly striate-angled, conspicuously marked with oblong white spots; leaves broadly obvate-lanceolate; contracted at the base into a short, stout, grooved petiole, and with scabrous margins and conspicuously reticulated veins, the pale under side, especially along the principal veins, covered with long, slender, scattered hairs; thyrsus elongated, narrow and often interrupted; calyx smooth or slightly pubescent, the short, obtuse lobes much shorter than the tube; tube of the pale, rose-colored corolla slender, four times the length of the calyx, the oblong lobes with strongly inflexed margins erect or spreading; stamens included.

Syringa villosa was discovered near Pekin about the middle of the last century by the French missionary, d'Incarville. It was found in the same region by David, and plants raised from seed sent to the Arnold Arboretum from Pekin by Dr. Bretschneider are now growing here. To this species should perhaps be referred, as M. Franchet hints in his paper upon the Chinese Lilacs,† *S. Josikæa* and *S. Emodi*, which, as he points out, cannot be separated from d'Incarville's plant either by the shape of the leaves, the character of the inflorescence, or by the shape and size of the flowers. In the Himalaya plant (*S. Emodi*), however, the long, white hairs which cover the under side of the leaves of *S. villosa*, are replaced by a minute puberulence on the mid-rib, which is even less developed on the leaves of *S. Josikæa*. The bark, color and markings of the young shoots and the habit of these three plants are identical, although in *S. Josikæa* the leaves are narrower than in the Chinese plant, but not narrower than those of many Himalaya specimens. The plants of *S. Josikæa*, now widely distributed in gardens, have all been propagated from a single plant discovered in a Hungarian garden, but not known to be wild in Europe, and probably of Asiatic origin.

6. *S. pubescens*, Turcz. Leaves ovate, three or four ribbed, cuneate at the base, one and a half to two inches long, pale-green above, pale below, the mid-rib distinctly pubescent; calyx smooth, with short, triangular, sometimes minutely mucronulate lobes; tube of the pale, rose-colored corolla very slender, six times longer than the calyx; the lobes of the small limb short and oblong; fruit obliquely oblong, verrucose.

§ § Sarcocarpum.

Leaves persistent.

7. *S. sempervirens*. Leaves coriaceous, short-petioled, ovate or suborbiculate, entire; cyme few-flowered; calyx cup-shaped, obscurely crenate; tube of the short corolla white, three times as long as the calyx. The lobes finally reflexed, thick, obtuse; anthers inserted in the middle of the tube; style slightly bifid; fruit drupaceous, with two cells; one abortive, the other containing at maturity a single, oblong, irregularly incurved seed.

Syringa sempervirens, Franchet, *Bull. Soc. Linn.*, Paris, No. 77, p. 613, was discovered by the French missionary, the Abbé Delavey, at an elevation of 7,500 feet in the mountains above Tapintze in Yun-nan. It has not been introduced into cultivation.

§ § § Ligustrina.

Tube of the corolla very short; flowers white.

8. *S. Amurensis*, Rup. Leaves ovate or oblong, obtuse or acuminate, contracted into a long, channeled petiole; thyrsus densely flowered; calyx sub-membranaceous, smooth, irregularly toothed; tube of the corolla included in the short calyx; the lobes obtuse; fruit oblong, obtuse, smooth.

Syringa Amurensis is a hardy shrub six or eight feet high, with white, fragrant flowers; a native of Manchuria.

9. *S. Pekinensis*, Rup. Leaves ovate or deltoid, obtuse or acuminate, rounded at the base or contracted into the long, slender, channeled petiole, dark green and opaque above, lighter on the under side; thyrsus densely flowered; calyx obscurely denticulate; tube of the white corolla barely longer than the calyx; fruit smooth, linear-oblong, acute, or slightly beaked at the end.

Syringa Pekinensis is a native of the mountains of northern China, where it was discovered by David. It is growing in the Arnold Arboretum, where it was raised from seed sent by Dr. Bretschneider from Pekin, but as yet has shown no disposition to flower. It is here a slender, tree-like shrub, perfectly hardy, and already ten to twelve feet high, with long, graceful, flexuous branches, covered with a smooth, yellow-brown bark, not very unlike that of a Cherry tree. A plant with distinctly weeping branches appeared among the seedlings raised in the Arboretum.

10. *S. Japonica*, Maxm. Leaves broadly ovate, acuminate, contracted into a sharp point, rounded or slightly cuneate at the base, smooth above, villous-pubescent on the under side; thyrsus many-flowered, calyx puberulous denticulate; tube of the corolla included in the calyx, the lobes thickened on the margins, apiculate; the smooth fruit oblong, obtuse.

Syringa Japonica is a native of Japan. It has been cultivated in the Arboretum for a number of years, where it makes a handsome small tree.

11. *S. rotundifolia*, Decne. Leaves orbicular, abruptly acuminate at the end, cordate or rounded at the base; panicle many-flowered; calyx membranaceous, slightly denticulate, tube of the corolla included in the calyx, the lobes ovate, obtuse.

Syringa rotundifolia, Decne., *Nouvelles Archives du Muséum*, ii, 44, is a native of south-eastern Manchuria, and has not yet been introduced into cultivation. *C. S. S.*

* *Jour Linn. Soc.*, xviii. 78.

† *Observations sur les Syringa du nord de la Chine, Bull Soc. Philomathique de Paris*, July, 1885.

A Tropical Garden.

THERE was published in one of the early issues of Garden and Forest an illustration showing the entrance of what may be called, perhaps, a typical New England garden, or rather of a garden in which some of those forms of plant life typical of the vegetation of north-eastern North America—the White Pine, the Hemlock, the Oaks, Maples and the Hickories—are conspicuously displayed as Nature often groups them. Our illustration on page 223 of the present issue represents the entrance of a garden almost at the other extremity of the

earth, and about as unlike a New England garden in the nature of the plants which adorn it as it is possible to imagine. It is the entrance to the Botanical Garden at Peradenia, near the famous city of Kandy, in the Island of Ceylon, where for seventy years the British Government has maintained one of the most important botanical establishments in the tropics. The Mahavelli River flows round the garden, which occupies a horseshoe-shaped peninsula among the mountains, and which on the land side is protected by impenetrable thickets of Bamboo. The climate is admirably adapted to insure the vigorous growth of tropical plants, which are found here of a vigor and size rarely attained in other tropical gardens. Peradenia differs widely in arrangement from most of the so-called botanical gardens of the world. The plants are not huddled together in formal beds, but are grouped naturally through the garden, which is about one hundred and fifty acres in extent, and produces a broad, park-like effect. The great clumps of different species of Palms near the entrance will serve to indicate how the most important natural groups of plants are managed in this truly noble garden, and to show to our readers some of the beauties of tropical vegetation. The large tree, the top of which appears at the left of the picture above the Palm in the foreground, is the *Ficus elastica* or Rubber-plant, so commonly grown in this country as a small pot-plant for the decoration of living rooms. In its home in the tropics it attains the size of a noble forest tree, often a hundred feet in height, with an enormous leafy crown borne on branches spreading out horizontally forty or fifty feet from a ponderous stem, supported on twenty or thirty buttresses, from which huge snake-like roots spread out over the surface of the ground for a distance of one or two hundred feet. It is the "Snake-tree" of the natives. The collection of Palms in this garden, from both the old and the new worlds, is very large, and not the least remarkable is the native Talipot Palm (*Corypha umbraculifera*), which, unfortunately, does not appear in our illustration. No other tree, perhaps, presents a more striking and remarkable spectacle than the Talipot when it shoots up its giant inflorescence high above the top of the mountain forests in which it grows. The trunk is perfectly straight and pure white, like a marble column, supporting at its summit, often one hundred and fifty feet from the ground, a crown of fan-shaped leaves, which, on fully grown specimens, have a surface of 150 to 200 square feet, and from which, once in the life-time of the tree—generally when it is seventy or eighty years old—shoots up a pyramidal inflorescence thirty or forty feet in height, and covered with countless myriads of small yellow-white flowers. When the seed is ripe the tree dies. The "Ola" paper of the Cinghalese was made from the leaves of this tree; and all the old Paskala manuscripts in the Buddhist monasteries on the island were written with an iron stylus on paper made by boiling narrow strips of Talipot leaves. We shall hope on another occasion to illustrate some of the remarkable plants in the Peradenia garden.

A Tropical Garden.—See page 222.

"Everything made by man's hand has a form which must be beautiful or ugly: beautiful if it is in accord with nature and helps her; ugly if it is discordant with nature and thwarts her."

Cultural Department.

Celery.

THIS is probably the most important of all our garden crops. It can be used every day in the year; from September till April as blanched Celery, and from May till August as green Celery for flavoring soups. An abundance of blanched Celery can be found in the New York and other city markets in July and August, but it is Kalamazoo and not Long Island Celery. We have tried hard enough to have good blanched Celery in summer, but have always failed, the crop being destroyed by rust. Why not grow it in moist land, as they do in Kalamazoo? We have tried that, and on the naturally moist or wettish land it has rusted far worse than in good, common garden soil.

The White Plume is a most excellent Celery for use from September till New Year's, and as it is self-blanching, and the blades, as well as the stalks of the inner leaves, become white, it has an uncommonly handsome appearance. Although it is said that this variety needs no earthing up, we find that banking lengthens the stalks and renders them much more tender. Golden Heart is a most excellent all-round variety, dwarf, and suitable for early or late crops. New Rose is much like London Red. The pink tinged Celeries are seldom esteemed as highly as the white ones, but they are the finest flavored and capital keepers. Boston Market, regarded so favorably around Boston, and there grown with all its sprouts, is not so great a favorite here. Its best characteristic is that it keeps well. In growing it but one head should be allowed and all the sprouts rubbed off at planting time and then again before the banking is begun. Henderson's Half Dwarf is an excellent sort for use before March, but does not keep later. The Golden Self-Blanching is after the style of White Plume, only yellow, and in no way to be preferred. The giant Celeries require too much room, are unwieldy to handle, are poor keepers, and their leaf stalks are often hollow.

Seed of Golden Heart sown in a flat in the green-house about the end of January, and the seedlings afterward pricked off into other flats and then into a cold-frame, are now planted out in rows three feet apart in the garden. These now furnish a good supply of leaves for flavoring. But they will be of no use for white Celery; if kept for this purpose most of them would run to flower and all would rust. A March sowing gives the earliest white Celery here. The main crop was sown April 26th in a well prepared out-door bed, and the seedlings are now up in their second leaf and fit for pricking off into beds. We never transplant directly from the seed bed, but first prick off the seedlings four to six inches apart into well prepared beds, there to remain till planting time. By this means well-rooted, stocky plants are secured. The main crops are planted out in July and as the ground is ready; sometimes it is August before the planting is over. Celery succeeds Marrow Peas, early Snap Beans, Potatoes, Cauliflower, Cabbage or Strawberries. For the crops we shall use before New Year's, we line off the ground in rows four and one-half feet apart and throw out the ground in the rows to a depth of six inches and to a width of ten inches. This gives us ample room for earthing up the crop, and the trenches are handy for holding manure and water. We manure broadcast for the spring crop and in the row for the Celery. Planting on the level has been tried here, but with indifferent success. For Celery to be used after New Year's we plant in the same way, but in rows only three feet apart; this is because the late crop should not be earthed up, except to "handle" it, before it is packed into trenches to keep through the winter.

One of the chief points to observe in growing Celery is that from the time it germinates till it is packed away for winter it should never suffer by drought.

In banking up Celery in fall some discretion should be used. Celery banked up in August whitens in three to four weeks, that banked up in September in four to six weeks, but that banked up in October will not whiten before New Year's, if then. Do not bank up Celery all at one time, but a little at a time, and never "handle," bank or store Celery when it is wet or damp, else rust or rot may overtake it. Celery to be used before Christmas should be banked in September, but avoid banking or handling late winter Celery before the beginning of October. September and October are the best growing months for Celery.

Our Celery is wintered in trenches on a warm, sunny slope. The Celery is in single rows, and the trenches are as deep as the Celery is long, the plants being packed up close against each other. Four of these rows, each nine inches distant from the other, are formed into a ridge in order to lead off the surface the rains of winter. And to further keep them dry in winter, we cover them with boards. We also use salt hay and forest tree leaves to exclude hard frost from the ground. The Celery keeps in this way in these trenches till the spring thaws set in; then it is lifted out, all decaying matter cut off, and it is buried again, but this time above ground, with earth between the plants and shutters over them. Celery in plenty was kept in this way up till the 7th of May. But towards the end of April Celery weakens perceptibly.

Now, while these dates are all very well for Long Island, in less favorable localities Celery seed should be sown proportionately earlier.

It is a fact that Celery is often spoiled in preparing it for use, by washing it. In order to have Celery in its finest condition, as regards crispness and flavor, it should not be washed or robbed of all its roots till immediately before it is prepared for table. Washing and dressing Celery before sending it to the kitchen or some two or three days before using it, as happens when it is sent to town, may make it look well, but it surely injures the flavor of the plant.

Glen Cove, L. I. *W. F.*

Spathoglottis Kimballiana.—This is a handsome and very remarkable Orchid, very rare, and the finest of the genus. It is now in bloom with W. S. Kimball, Esq., of Rochester, N. Y., in whose honor the plant is named. It flowered for the first time in England some six weeks ago in the collection of Sir Trevor Lawrence, and has been awarded a first-class certificate by the Royal Horticultural Society of London. Its flowers are as large as *Phalænopsis grandiflora*, and of a very pleasing yellow color, being borne many together on a fine erect spike. It was discovered in 1886 by I. Forstermann in the Malayan Archipelago, who first (from a distance) thought it a yellow *Phalænopsis*, so great was the resemblance of the flowers to that species. It is sparingly found growing on rocks in a very moist situation.

Oncidium pulvinatum.—This fine Oncidium, introduced many years ago, is now rarely met with in collections, having been discarded of late years by cultivators, owing to its cultural requirements not being successfully carried out. A grand specimen in fine health is now flowering in the well kept collection of H. Graves, Esq., Orange, N. J. It has four stout, many-branched spikes densely laden with upwards of 1,200 flowers, lip being of a fine bright yellow, the sepals and petals beautifully marked with dull chocolate. Pot culture and intermediate house temperature suit this species admirably, with a good supply of water during active growth.

June Notes from the Flower Garden.

DOUBLE-FLOWERED herbaceous Pæonies find a place, and generally a prominent one, in all old country gardens, where they spring up and flower and die down year after year. Single-flowered Pæonies, although much more beautiful, are less often seen, and gardeners in this country are only just beginning to appreciate them and to realize that among them are some of the very finest of all hardy herbaceous plants. Nearly two dozen species or sub-species of Pæony are known, natives of southern Europe, northern and western Asia and western North America; of these all but one are herbaceous. Many of the species have long been cultivated, especially *P. albiflora*, a Siberian plant, and *P. officinalis*, from southern Europe, and they have given rise to numberless varieties, both single and double flowered, and with petals varying from pure white or pale pink to deep scarlet. Many of the species have probably never been cultivated in this country, and no one has yet made here anything like a complete or even a representative collection of the best garden varieties. Such a collection, could it be properly studied and correctly named, would be of great service to gardeners, and would well repay systematic study. Certainly there is no class of hardy plants of so much beauty which are so inadequately known in this country. The most beautiful single-flowered Pæony here, in a very small and badly-selected collection, is *P. albiflora*, with deliciously fragrant, pure white satiny flowers, four or five inches across, two or three being produced sometimes from the same stem. Vesta, a seedling, raised evidently from the last, has immense pale pink flowers, shaded delicately with rose, and when fully expanded ten or twelve inches across. Abyla has smooth, rosy pink flowers, three inches across, and is a less desirable plant than Galopen, with much larger pink flowers, but not otherwise distinguishable from it. Algeria has dark purple-red, satiny flowers, and Gordens, very handsome, large, spreading, dark purple-red

flowers. Ranunculiflora was in bloom ten days earlier than any of these; it is a form no doubt of *P. officinalis*, with rosy red, not very large nor distinct flowers. I do not pretend to vouch for these names, which are those under which the plants were imported from Europe.

The showiest herbaceous plant just now in flower in the gardens in this neighborhood is a very fine variety of the Caucasian Poppy (*Papaver bracteatum*), raised several years ago by Mr. Francis Parkman, in which the flowers are large—seven or eight inches across, deep blood-red, and handsomely marked on the inside of the petals with a dark purple-black eye. It is a very hardy plant, which, when once fairly established, spreads into a broad mass, from which the stout, naked scapes rise to a height of two to three feet. This Poppy rarely produces seeds; and is propagated by root cuttings, taken in the summer, before the plants begin their second or autumn growth. The young plants are best grown in pots, until they have attained considerable size, and then, as they transplant badly, they should be planted without disturbing the roots where they are to remain permanently.

Vincitoxicum acuminatum is a Japanese plant, with twining stems two or three feet long, softly pubescent, long green leaves, and loose axillary, long-stalked clusters of pure white star-shaped flowers, which it continues to produce during several months. It is rather an interesting addition to the list of hardy summer-flowering perennials.

Gillenia trifoliata, the Bowman's Root of southern woods, is an excellent plant in the herbaceous border, where it makes a wide, graceful mass of slender red stems, two or three feet high, covered with light, three-lobed leaves, and many pretty white-petaled flowers in loose panicles from the ends of the branches.

Allium cæruleum, a Russian species, is a good border or rock-garden plant, with showy, compact heads of bright blue flowers, which, individually, are not large. It is perfectly hardy, and well worth cultivating for the peculiar color of the flowers. Another Onion (*Allium Moly*), a native of southern Europe, and a very old garden favorite, still holds its own among all the more recent introductions of this family. A mass of this plant, when the bright yellow flowers, which appear in compact umbels above the broad leaves, are open, is always a pleasant sight, which year after year will be renewed without care or trouble.

Vancouveria hexandra is a low herb, belonging to the Barberry family, and a native of the North-west coast, where it inhabits the moist, shady Coniferous forests. It takes kindly to cultivation here, and has now spread over a considerable space among the rocks in the shadiest part of the rock-garden, where now it is throwing up in great profusion its tall, naked, slender flower scapes. They are often two feet high, and bear near the summit a number of small, white, nodding flowers on long, slender, filiform, drooping pedicles. The thin, pale green leaves are composed of two or three stalked, obtusely-lobed leaflets, which possess in themselves no little beauty.

But the handsomest flower in the garden, and one of the handsomest of which the North American flora can boast, is the great red and white Lady's Slipper (*Cypripedium spectabile*). It is not a rare plant at all in Northern bogs, and one of the easiest of all the terrestrial Orchids to cultivate, either in the open border or in a pot, but no other Cypripedium can compare with it in beauty, and it quite puts to shame all the high-priced tropical species and the innumerable and never-ending garden hybrids which Orchid-growers now produce so easily. *Cypripedium spectabile* is a downy plant, with leafy stems, a couple of feet high, bearing one or several pure white flowers, with an inflated, prominent, rosy-purple lip. There is not a garden which cannot be made more attractive by bringing into it this charming plant.

Boston, June 20th. C.

Notes from the Arnold Arboretum.

THE Rocky Mountain Raspberry (*Rubus deliciosus*), although one of the first of the central and southern Rocky Mountain plants known to botanists, having been discovered in 1820 by Dr. James, the surgeon of Long's expedition, has only been in cultivation a few years, comparatively, and is still very little known in gardens. It is one of the handsomest and hardiest of the early summer-blooming shrubs. Like the well known *Rubus odoratus* and *R. Nutkanus*, it has simple leaves and large flowers. *R. deliciosus* has erect, arching, graceful stems four or five feet high, covered with light brown or gray striated bark. The bright green leaves are borne on slender red petioles one and a half or two inches long. They are two inches or more in diameter, reniform-orbicular, rugose, three to five lobed, sharply serrate, tomentose pubescent when young like the calyx and the young shoots, which are also red. The erect, few, generally one-flowered peduncles, are long and slender. The flowers, when expanded, are nearly two inches across, and pure white. They resemble miniature Cherokee Roses, and present a charming appearance when they cover the arching branches of the plant. The fruit is small, composed of three or four dry, tasteless carpels; and the delicious flavor, to which the plant owes its name, was developed doubtless in the imagination of the hungry botanist who discovered it. This plant may be easily raised from seed, which is produced here, but not very abundantly, or by cuttings; it is perfectly hardy, and will thrive in any exposure and in any good soil. Stronger shoots and better flowering wood are obtained by cutting out the old stems after they have finished flowering, thus stimulating the growth of vigorous young wood.

The Nine-Bark (*Physocarpus*, or, as it is more generally known, *Spiræa opulifolia*) is a familiar plant in the gardens and along the borders of woods and streams in the Northern States. It will not be in flower here for two or three weeks yet, although its near relative from another continent, *Physocarpus Amurensis* of Manchuria, where it was discovered in 1856 by Maximowicz in the mountains along the Amoor River, has been flowering here for several days. It is a large shrub, with stout erect branches, six or eight feet high, covered, like those of its American congener, near the base with loose bark, separating into numerous thin layers. The ample leaves are broadly acuminate, three to five lobed, and sharply serrate. The large, white, long-pediceled flowers, three-fourths of an inch across, with conspicuous purple anthers, are borne in rather loose subracemose corymbs, terminal on lateral red, leafy young branches, produced in great profusion from the stems of the previous year. The Manchurian Nine-Bark is a very hardy, free-growing shrub, rather coarse in appearance and habit, but well suited to grow in the shade or to produce bold, effective masses of foliage in large shrubberies or on rocky banks.

Among Spiræas, two species now in bloom in the Arboretum, *Spiræa alpina* and *S. cana*, are rarely seen in gardens here, although possessing very considerable merit as ornamental plants. *S. alpina*, like *S. Thunbergii* and *S. prunifolia*, belongs to the section of the genus in which the corymbs of flowers are produced from the ends of very short lateral branches. It is a graceful plant, three or four feet high, with slender, arching, flexuous, angled stems and linear-lanceolate leaves which are sharply acuminate, pale green, entire or sometimes sharply serrate towards the apex. The handsome corymbs of white flowers are produced in great profusion, and in size and general appearance are not unlike those of the well-known *S. Cantoniensis* (*Reevesiana*), in which, however, the inflorescence appears at the end of long lateral branches. *S. alpina* is a native of the mountains of Siberia and Mongolia. It is very hardy here and soon grows into a handsome specimen. *S. cana* is a very variable species with erect, round, pubescent branches, growing here to a height of from three to four feet. The leaves are elliptical, silky, villous on the lower side, entire or sometimes with three or four sharp teeth at the end; the small, many-flowered corymbs are borne at the end of long leafy branches of the current year. It is a native of Croatia and Dalmatia. *S. Sauranica*, a larger and less pubescent plant and not rare in gardens, is considered a variety of this plant.

Among the early Viburnums in flower is *V. dilatatum*, a common Japanese plant not uncommon also in central China. Here it is a low, wide-branching shrub, now three or four feet high, with rigid spreading branches, covered with very dark gray bark; handsome ovate or obovate leaves three or four inches long, rounded or sometimes abruptly acuminate at the end, sharply and conspicuously serrate above the middle, otherwise quite entire; bright yellow-green above, paler on the under side, with very prominent mid-rib and primary veins. The under side of the leaves, especially along the veins, petioles and young shoots, are densely covered with short white tomentum. The small, creamy white flowers are produced in a wide, open-branched, long-stalked cyme, from the end of short, leafy branches. The orbicular-ovate fruit, which is not produced here very abundantly, is scarlet. This is a very hardy plant, not showy in flower, but worth cultivating for its handsome foliage, which, when bruised, has, as does the wood, an exceedingly strong and disagreeable odor.

Viburnum pubescens, although rarely seen in gardens, is an exceedingly beautiful species in cultivation. It is a compact shrub, two or three feet high, with rigid, erect branches and ovate, taper pointed leaves, remotely and sharply serrate, except near the base, conspicuously pinnately veined, the under side, as well as the young shoots and very short petioles, soft

pubescent; the flat cymes of small, white flowers, which, in cultivation, are produced in the greatest abundance, appear at the ends of the young branches. The fruit is dark purple or nearly black. *Viburnum pubescens* is found along the borders of woods from western Vermont to Wisconsin, extending south to New Jersey and Kentucky. It is very hardy and flourishes in good garden soil. Like so many North American shrubs, it has been too much neglected as a garden plant.

And this is true as well of the Sheep-berry, *Viburnum Lentago*, a very handsome, small tree, or tree-like shrub, which sometimes attains a height of twenty-five or thirty feet, with a clear, straight trunk, supporting a round compact mass of foliage. It has large ovate, sharply pointed leaves, three or four inches long, closely and sharply serrate, and borne on long margined petioles, which, like the buds, are covered with brown scurf. The broad flat cymes, four or five inches across, of small, creamy white flowers, are sessile. The black, oval fruit, half an inch long, ripens in the late autumn, and has an agreeable, but rather insipid flavor. The wood of this species has a most disagreeable odor. *Viburnum Lentago* is a common northern plant, widely and generally distributed from the shores of Hudson Bay to Georgia and Missouri, attaining its best development far north, and found generally in deep, rich soil, along the borders of swamps or streams, or on high rocky ridges. The compact habit of this plant, its handsome foliage and showy clusters of flowers, entitle it to general cultivation.

Viburnum macrocephalum, of which the form with all the flowers sterile only is known, is not often seen here. It was discovered by Robert Fortune in gardens at Shanghai and Chusan, and has always been rather a favorite plant in England. Here it is perfectly hardy and flowers every year, although it does not grow with any vigor, or produce its cymes of pure white flowers, which are generally mistaken for those of a white-flowered *Hydrangea hortensis* in much profusion. It is a low shrub, with rigid, wide-spreading branches, covered with smooth, light gray bark, and rather small, pale, oval leaves, with small remote teeth, and covered on the under side with stellate pubescence. It is usually grafted on *Viburnum Lantana*, and must then be constantly watched to prevent the stock from sending up suckers, which rob the plant of what little vitality it possesses here.

Among plants of recent introduction of the very first class, from an ornamental point of view, must be mentioned *Lonicera Alberti*, a dwarf Honeysuckle, discovered a few years ago by Dr. Albert Regel in the high mountains of eastern Turkestan. It is one of the Bush Honeysuckles, and is a low, smooth plant, with long, slender, spreading, pendulous branches, which only rise a foot or two from the ground, but soon make a wide, graceful mass of light green foliage. The leaves are deciduous, opposite, glaucous, linear oblong, obtuse, entire, or with one or two teeth near the base, from an inch to an inch and a half long, and are borne on short petioles. The fragrant flowers are produced in pairs on short axillary peduncles; the cylindrical tube of the rosy lilac corolla is four times longer than the calyx, with a spreading limb of five nearly equal, ovate-elliptical lobes, about three-quarters of an inch across when expanded. *Lonicera Alberti* is a perfectly hardy plant of easy cultivation; it is admirably suited for the margins of shrub beds, where its graceful branches can spread out over the turf, for the rock-garden, or for covering rocky banks.

Lonicera Maximowiczi is another handsome Bush Honeysuckle now in flower. It is a native of the mountain forests of eastern Manchuria. Here it makes a neat bush, with upright branches three or four feet high, covered with pale gray bark. The leaves are light green and shining above, paler on the lower side, which is covered with long, slender hairs; they are an inch and a half or two inches long, and hardly exceed the slender peduncles, which bear two bright, rose-colored flowers, the limb deeply two-parted, the upper division three-lobed. This is a very hardy plant, worth a place in a large collection of shrubs.

J.

June 15th.

The Forest.

The Forest Vegetation of North Mexico.—V.

TURNING away at last from Chihuahua and the region stretching along the line of the railroad far northward and still farther to the south—a region made familiar by two seasons of diligent searching out its scanty vegetation over wide and weary desert areas of mountain and plain—a region rich only in the matchless tints of its landscape and the floods of white sunlight overspreading all—we set out joyfully for a fresh field amidst the western Sierra Madre.

Following the route of Wislizenus, the early explorer, on his involuntary journey from Chihuahua to Cusihuiriachic, as nearly as a wagon road can follow a bridle trail in its devious course over the mountains and through their cañons, we cross three chains of mountains with intervening plains or valleys of such character and bearing such forest vegetation as has been described. Beyond Carretas our road mounts a high mesa, whose marginal bluffs are covered with an open growth of low Oaks and Junipers of the species already mentioned. The gullies, which cut into the mesa from every side, are occupied by the same growth, and from the gullies the trees scatter out over the adjacent mesa for a short distance; but they appear to have been unable to gain a foothold on the central area of the mesa. Some ten miles further on, however, where the mesa, gradually ascending, terminates in a broad ridge, its summit, as well as its slopes, is covered with a thin forest. Here, then, in our journey up to the mountains we have reached, at an elevation of 6,000 feet, the timber line. Descending from the mesa by a steep and tortuous grade, our road enters a wooded cañon of a pine covered range, and winding up through it, crossing its swollen stream thirty times in a distance of seven or eight miles, threading its narrow intervales and clambering over its frightful ledges, brings us after a journey of seventy-five miles to the old mining town of Cusihuiriachic, noted among botanists as being the place where Wislizenus was held prisoner of state, as he styled it, from Sept. 13th, 1846, till the 3d of March following, restrained during most of that time within limits five miles from the town.

La Bufa towers over the cañon, through which straggles the town, a sharp peak whose summit is little less than 8,000 feet elevation, the highest point of the divide within view. Southward the divide lies amongst a broad belt of mountains, confused and abrupt upheavels of porphyritic rock, covered with forests of Conifers and Evergreen Oaks, which to eyes grown weary of the bare ranges to the eastward, seem luxuriant. As the slopes of the Bufa and the hillsides of its immediate vicinity have doubtless suffered deforestation from an early day, to supply the needs of the town and its mining furnaces founded in the beginning of the eighteenth century, it is probable that Wislizenus, who had no time for collecting on his forced ride from Chihuahua, in those forests first made the acquaintance of *Pinus strobiformis*, *P. Engelmanni* and *P. Chihuahuana*, three species published by Engelmann in Wislizenus' Report of his Mexican journey. The Arbutus mentioned by Engelmann in connection with these Pines nearly answers the description of *A. petiolaris, HBK.*; the Juniper may be either *J. occidentalis, Hook., var. conjugans, Engelm.*, or *J. pachyphloea, Torr.*, both of which are of common occurrence in this district; and the dwarf Evergreen Oak is perhaps *Quercus oblongifolia, Torr.;* but the mention of a Thuya must have been an error. That Wislizenus should not have secured specimens of *Quercus hypoleuca, Engelm., Q. grisea, Leibm.*, and *Q. fulva, Leibm.*, even on the Bufa common with small specimens of several of the above, surprised me; as did the finding, during my stay of five days in that vicinity, of more than a score of herbaceous plants, which have remained undescribed until recent years. But this shows the unfavorable circumstances, lamented by Wislizenus, under which his remarkable collection was gathered.

Northward from the Bufa for a few miles the divide is but a broad swell connecting two great plains, which are more widely separated farther north, where the divide rises again to an altitude of perhaps 9,000 feet. The plain lying east of the divide sweeps down beyond the horizon to the *laguna* of the deserts near the Rio Grande; that to the west, twenty or thirty miles wide and one hundred and fifty long north and south, rimmed on one side by the divide and on

the other by the Cordilleras, is the great basin of the Papigochic, or upper Yaqui. Fifty miles away in the northwest, looking across this plain and beyond a blue mountain chain which it bears, we see a lofty crest of the Cordilleras, which is the goal of our journey.

C. G. Pringle.

Correspondence.

To the Editor of GARDEN AND FOREST:

Sir.—I am a little surprised in reading the interesting notes on the Ginkgo tree in your last number that no mention is made of the specimen on Boston Common, which has a historical interest worthy of record. It formerly stood in the grounds of Gardiner Greene, Esq., on what was then Pemberton Hill, now Pemberton Square. After his death the estate was sold, and a condition of the sale was that this tree should be preserved, as there was then but one other in the country, which was the one you allude to as planted by Dr. Hosack. I remember perfectly seeing the tree on its way to the Common in 1834, or perhaps 1833. It was then some thirty feet high, and was transported on a low four-wheeled truck built for the purpose, and was planted on the Beacon Street Mall, directly opposite the house at the corner of Joy Street, to which Mrs. Greene had removed from Pemberton Hill.

Its removal was a subject of general interest at the time, as the papers announced that it was a very rare tree from Japan, a region almost as little known to us then as the moon.

It still lives and thrives, and its site has been rendered classic by the pen of the "Autocrat," as it is the starting point from the Beacon Street Mall of the "Long Path," to which he makes such touching allusion.

There are some fine specimens of the Ginkgo in Providence; but when I last saw them, five or six years since, they still preserved the stiff habit you describe, though they were some fifty feet in height.

Minneapolis, June 8th. *H. W. S. Cleveland.*

[The old Ginkgo on Boston Common is well known to many of the older inhabitants of that city. It is now not more than forty feet high, and is not a large or a fine tree for its age, having perhaps never entirely recovered from the effects of the removal; it has for many years been crowded and overshadowed by neighboring Elms, and many of its branches are dead or dying. It has never taken on the graceful habit which this tree assumes at maturity when growing under favorable conditions.—ED.]

New York, June 18th, 1888.

To the Editor of GARDEN AND FOREST:

Sir.—I have noted with interest the remarks of "Philodendron," in your issue of June 11th, on the conditions of the Norway Spruces in Central Park.

About a year ago the authorities of the park became alive to the necessity of removing dying, deformed or crowded trees, and since that time 6,215 trees of this objectionable character have been cut down. Of this number 760 have been Norway Spruces.

The effects of this work may be seen along the west drive of the park, and particularly on Fifth Avenue, between Sixty-fifth Street and Seventy-second Street. In many places no replanting has been found necessary, as the original growth was sufficiently dense to allow a considerable margin for thinning-out. In other places, such as the bank on Fifth Avenue, just referred to, a new plantation has been established, consisting of shrubs and trees such as *Spiræa opulifolia, Philadelphus grandiflorus, Lonicera fragrantissima, Cornus sanguinea, Viburnum dentatum, Betula alba, Pinus Strobus, Pinus Mugho, Picea orientalis, Pseudotsuga Douglasii*, etc.

The park authorities have frequently been criticised for the radical cutting-out thus undertaken, and it has been thought best to remove the least healthy trees first and cultivate intelligent public sentiment in regard to this cutting by managing it in such a way as to prevent a striking appearance anywhere of denudation.

Several large groups of diseased Norway Spruces are marked for removal during this summer and autumn, and by another spring I think there will be few of these objectionable Spruces left in the park.

SAM. PARSONS, JR., Superintendent of Parks.

Periodical Literature.

Harper's Magazine for July contains an article by Mr. F. H. Spearman called "The Great American Desert," describing those districts, formerly known by this name, which are now largely under cultivation and furnish support to a rapidly growing and prosperous population. It differs from many articles on the newer regions of the Great West we have read in being sensible as well as emphatic—in being neither a pessimistic tourist's chronicle, nor a panegyric concocted in the interests of land schemers, railroads, or the "boomers" of embryo cities. One paragraph we are glad to quote as reinforcing opinions already voiced in the editorial columns of GARDEN AND FOREST. After speaking of the way in which the great vexed question of the rainfall has been discussed by "experts who know absolutely nothing about the actual facts in the case," and by residents who are eager to explain the increase in rainfall, they assume, by all sorts of ridiculous reasons, Mr. Spearman shows how no perceptible increase in the amount of rainfall need be assumed to account for the increased humidity of the soil. "It is certain," he says, "that the buffalo grass sod which has covered these plains for centuries has become as impervious to water as a cowboy's slicker. Hence the rain never penetrates it, but rushes off the 'divides' in a fury to reach the rivers. Any one who has seen it rain on the plains can understand something of the deluge which covers the entire prairie to the depth of twelve to twenty-four inches during summer showers. It is easy to comprehend then how the numerous cañons in Kansas and Nebraska are cut by the eagerness of the flood to roll eastward. But when the prairie sod has once been plowed, the soil absorbs water like a sponge. After a day's heavy rain there is no mud visible in a plowed field; the moisture soaks downward to great depths, and the soil retains it through weeks of dry weather afterward, sustaining its crops without additional rain for a wonderful length of time. It is at least reasonable to suppose that under this changed condition of large portions of the soil, which now absorbs rain instead of shedding it like a rubber coat, the climate retains its atmospheric moisture better, and the rainfall becomes more regular, less falling at a time, but falling oftener. This change may account, too, for the heavy dews which of late years have been remarked in this country—a thing absolutely unknown ten years ago. The upturned soil parting with but a little of its moisture every day, it returns to it at night, well nigh as refreshing as a shower."

One of the illustrations which accompany Mr. Spearman's article shows a rude rustic bridge, built of logs, and, apparently, ropes, which is most interesting in the way it reproduces the construction of the vast bridge of stone and iron that stretches between New York and Brooklyn.

In Mr. Chas. Dudley Warner's "Studies of the Great West," in the same number of *Harper*, he speaks of the Central Hospital for the Insane of the State of Illinois as having "a large conservatory of plants and flowers," which is "rightly regarded as a remedial agency in the treatment of the patients." His description of the plan of Indianapolis, which its inhabitants are fond of calling the "Park City," is interesting.

A third noteworthy article in this magazine is one by Mr. Peter Henderson on the "Street Trees of Washington."

Recent Plant Portraits.

Botanical Magazine, May.—DENDROBIUM CLAVATUM, *t.* 6993; a magnificent species with large, orange colored flowers nearly three inches in diameter across the sepals, which, as well as the much larger orbicular petals, are spreading; the uniform or almost circular limb of the lip deep purple, margined with golden yellow. It has tufted, pendulous stems, two or three feet long, and short, broad, elliptical leaves. Although long known to botanists and one of the earliest discovered of the golden flowered Indian Dendrobes, this plant is here first figured in all its great beauty. It must not be confounded with Roxburgh's plant of the same name—the *D. sulcatum* of Lindley, a much more common species.

ALLIUM SUWOROWI, *t.* 6994, a tall, handsome species from central Asia, where it was discovered by Dr. Albert Regel on the Kirghis desert and near Bokhara. The tall, stout scape springing from a basal rosette of glaucous-green leaves, bears a large, long handsome, dense umbel of dark mauve-colored flowers.

ALPENIA OFFICINARUM, *t.* 6995; "the subject of this plate, the 'lesser or Chinese Galangal,' was formerly in great repute as

an aromatic stimulant amongst the Arabs and Greeks, and formerly in western Europe, but is now banished from the British Pharmacopœias. The plant that produced it was unknown to botanists till 1867, when Mr. Sampson, accompanied by that excellent botanist, the late Dr. Hance, of China, discovered it near the village of Tung-sai, on the peninsula of Lei-chan-fu, opposite the Island of Hainan itself." Its nearest affinity is the well-known *A. culcurita*, and Sir Joseph Hooker is inclined to believe it to be referable to that plant.

DOUGLASIA LÆVIGATA, *t.* 6996, an alpine plant from the mountains of Oregon.

PASSIFLORA VIOLACEA, *t.* 6997; a free blooming, green-house climber, believed to be a native of Rio Janeiro. It has three-lobed leaves and handsome lilac flowers, on solitary, slender peduncles, six to eight inches long, upcurved toward the end.

RHODODENDRUM ARGENTUM.—*Revue Horticole*, May 1.

CHRYSANTHEMUM BARON D'AVÈNE and C. JULES BARIGNY.—*Revue Horticole*, May 1. Two new varieties raised by M. T. Délaux, the first a cup-shaped flower with rose-violet petals, those in the centre much lighter, almost white; the second of the Japanese class, with narrow rose-colored petals.

SALIX BALSAMIFERA, Figs. 1–5, *forma* typica; Fig. 6, var. *vegeta;* Fig. 7, var. *lanceolata;* Fig. 8, var. *alpestris.*—*Bulletin Torrey Botanical Club*, May.

THE GERMAN PRUNE.—*Canadian Horticulturist*, May. One of the most generally cultivated fruits of central Europe—the German Prune—has been found to give excellent results in some parts of Canada, where its more general cultivation is now recommended.

ERYTHRONIUM GRANDIFLORUM, var. ALBIFLORUM.—*Gardener's Chronicle*, May 5. A little known, but very handsome plant, of Oregon and Washington Territory.

VITIS PTEROPHORA, *Gartenflora*, May 15th.—A handsome Brazilian species, with green and red leafy branches, from which descend remarkable red cordy branches, forming at their extremities, where they can reach the water, great masses of rootlets like the tail of a horse. The branches produce from their extremities at the end of the season of growth elongated tubers, formed by the lengthening and swelling of a subterminal internode. These tubers are five or six inches long, green and fleshy. They finally drop off, and reaching the ground produce, under favorable conditions, new plants. The tendrils of this plant are equally curious. They are slender and forked, and provided at the end of each fork with an adhesive disk. When the tendrils reach a support the disks adhere to it and greatly enlarge; and if the support will admit of it the tendril will embrace it, secreting from its surface a viscid tissue which glues it fast to the supporting surface. The flowers are green and inconspicuous. There is an earlier figure of this plant in the *Botanical Magazine*, *t.* 6803; and it has been figured in the *Gardener's Chronicle* as *Vitis Gongylodes*.

Notes.

The Second Annual Session of the Texas State Horticultural Society was held at Denison, Texas, last week.

According to European dispatches to the daily press, immense tracts of forest land in Sweden have been recently swept by fire. The town of Sundsvall, on the Gulf of Bothnia, is said to have been almost entirely destroyed by the flames.

The Rose and Strawberry Exhibition of the Massachusetts Horticultural Society was held at Boston on the 26th and 27th of June. The exhibition of Strawberries was finer than it has ever been before. The Roses, on the other hand, although shown in great abundance, were somewhat inferior in quality to those of last year. A nice feature was a collection of forty or fifty species and varieties of single Roses, for which there seems to be a growing appreciation. Besides Orchids and a generous display of cut flowers, there was a good collection of flowering shrubs, the most attractive of which was an *Andromeda speciosa*. A noteworthy plant was a faultless specimen of *Rhynchospermum jasminoides*, which was over six feet high.

The passion for Orchids is developing in Germany, although more slowly than in England and France. A large number of the plates published in the various German horticultural papers are now devoted to representations of new or rare Orchids, and although previous auction sales had been so unsuccessful that for two years none had been held in the empire, one recently organized in Berlin by an English firm, amid many predictions of failure, proved entirely satisfactory. The trade were large buyers and many new-fledged amateurs made very extensive purchases.

The official programme for the horticultural section of the Paris International Exhibition of 1889 was issued in January. There is to be a permanent exhibition, lasting from May 6th to October 31st, accompanied by eleven special exhibitions of five or six days each. Some of these last are to be open to all classes of exhibits pertaining to the section of horticulture, while others are to be more restricted in character. All exhibitors who desired to make plantings this spring were to send in their applications before the 11th of February last, but for those who desire to plant next spring the lists will be open until February 1st, 1889.

The State appropriation for the expenses during the current year of the Department of Parks and Gardens in the City of Berlin amounts to 159,278 marks—about $40,000.

The official report of the wine production of France during the year 1887 shows a total result of 24,333,264 hectolitres. This is a falling off of three and one-half million hectolitres as against the year 1886, and is less than the average production of the last ten years taken together. The chief cause of decline is attributed to the increasing ravages of mildew and the Phylloxera, although certain western and southern departments had also to contend against disastrous weather. From Algiers, on the contrary, the report is encouraging, a notable increase being shown both in the extent of land planted with the vine and in the amount of wine produced. The cider harvest in France was also a good one, more than 5,000,000 hectolitres being produced in excess of the production of the year 1886.

Retail Flower Markets.

NEW YORK, *June 29th.*

The Rose crop of this locality has been demoralized by the protracted heat. Hybrids are small, colorless, and loose-petaled. American Beauties have been less affected, and La France are fine. A few Gen. Jacqueminots are arriving from Newport, and sell for from $1.00 to $1.50 a dozen. Marechal Neil Roses are scarce and small. They cost $1.00 a dozen. Catherine Mermets continue poor and are 75 cts. to $1.00 a dozen. Niphetos and Brides cost $1.00 a dozen, and fine Mde. Cuisins the same. Perles and Souvenir d'un Ami bring from 75 cts. to $1.00 a dozen. Hybrid Roses cost from 25 cts to 30 cts. each. Puritans bring from 15 to 25 cts. La France are $1.50 and $2.00 a dozen. Orchids cost 50 cts. a flower for Cattleyas, and 10 and 20 cts. a flower for Oncidiums. There are from 15 to 60 flowers on a spray of the latter species. Gladioluses are 10 and 15 cts. each. Peonies grow scarcer and bring 10 and 15 cts. each. Lily-of-the-Valley from Newport arrives in small lots. It is 75 cts. a dozen. Carnations bring from 35 to 50 cts. a dozen. Longiflorum Lilies and Callas cost 20 cts. each. Pea blossoms bring 25 cts. a dozen, and Heliotrope and Mignonette 50 cts. a bunch. The latter is very slender and ragged. Smilax costs 50 cts. a string and 40 cts. a yard. Field Daisies are 25 cts. a dozen. Moss Roses bring $2.00 a dozen. They are so fully open that they can no longer be classed as "buds."

PHILADELPHIA, *June 29th.*

The very hot weather which prevailed during the latter end of last week seriously affected the flower trade, and, even during this week, which is somewhat cooler, the demand is very limited. Transient trade is done only in the early morning or late in the afternoon. Amongst Roses American Beauty is superior to any other. Prices for Roses vary very little from those reported in last issue—which may, in short, be stated from 50 cts. to $3.00 per doz. Sweet Peas still continue to be in demand, at 25 cts. per doz. The Cornflower sells at the same price; the blue variety being most in demand. The only notable feature in novelties is in varieties of Coreopsis, which sells at 25 cts. per dozen. Water Lilies (*Nymphea Odorata*) are plentiful and also cost 25 cts. per doz. Carnations are still obtainable at 25 cts. per doz. Smilax costs from 40 to 50 cts. per string. *Asparagus tenuissimus* is in fair demand at from 50 to 75 cts. per string. Ferns, especially *Adiantum cuneatum*, are often asked for and sell at from 25 to 35 cts. per doz.

BOSTON, *June 29th.*

There is very little to be said about the cut flower market at the present time. Out-door Roses are just at their height and crowd everything else to the wall. On the street corners everywhere one sees great banks of Jacqueminots, Luizets and Hybrids in variety which are offered at five for 10 cts. Indoor Roses are very poor. The growers do not make any effort to produce good Roses under glass now, and many of them have cleaned out their houses and planted their young stock for next season's business. White Roses are still in demand, but there is nothing of the kind in the market worth buying. Carnations are abundant, cheap, but of inferior quality. Pink Pond Lilies sell well at $3.00 per dozen. Lily-of-the-Valley is offered in best quality at $1.50 per dozen. Gloxinias of glorious color and form are $1.00 per dozen. These are especially effective for basket work, but as cut flowers also they are very desirable. Mountain Laurel, which is just in flower, is used extensively in large decorations.